UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
WILSON, ROBERT W

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
	09/905,067	ACHARYA, YATIN
Office Action Summary	Examiner	Art Unit
	Robert W. Wilson	2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 September 2007</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claims 1, 7, & 10, what is meant by "size "? It is unclear whether applicant is referring to size of packet, size of header, or size of tag.

Referring to claims 3-6, 9, & 13-15, these claims contain the trademark/trade name "InfiniBand (Trademark) network protocol " in the claim language. The applicant has not provided a copy of the InfiniBand Network Protocol specification which pre-dates the application filing date. The applicant provided a tutorial on the InfiniBand which is not an acceptable substitute for copy of the official copy of InfiniBand Network Protocol Specification. The InfiniBand Protocol Network Protocol Specification can be utilized to define the scope of the claims. The capabilities associated with the InfiniBand Network Protocol vary with time and version of the specification. The applicant's claim is not entitled to scope coverage associated with the specification that is a later date that applicant's filing date; thus, applicants language is indefinite.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-2, 7-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable in view of Benayoun (U.S. Patent No.: 6,499,061) in view of Fan (U.S. Patent No.: 6,643,269)

Referring to claim 1, Benayoun teaches: a method (Method performed per Fig 1) comprising:

Nodes add label or tag to the data packet without altering the content of the header and switching of the network packets based upon corresponding tag without altering the content of the header per Fig 1.

Benayoun does not expressly call for: selecting by a network manager a size of address fields to be used for switching data packets traversing the network based on a number of the detected network nodes or configuring by a network manager each network each of switch tag,

Fan teaches: selecting by a network manager a size to be used for switching data packets traversing the network based on a number of the detected network nodes or configuring by a network manager each network each of switch (Master CPU allocates a short address (network Manager) based upon the number of detected nodes in the network col. 10 lines 40-45 and col. 5 line 57 to col. 6 line 67)

It would have been obvious to add the network manager varying the size of Fan to the label or tag of Banyoun in order to perform label switching in the network faster because the size of the tag is optimized based upon the number of nodes.

Referring to claim 2, the combination Benayoun and Fan teach: the method of claim 1,

Benayoun does not expressly call for: wherein the configuring step includes sending a management datagram to each network switch the management data gram specifying that the switching is to based on the switching tag and the selected size of the switching tag

Fan teaches: wherein the configuring step includes sending a management datagram to each network switch the management data gram specifying that the switching is to based on the switching tag and the selected size of the switching tag (The master CPU in the network relocates short addresses to all nodes (message must be inherently sent to all nodes which the examiner interprets as a datagram which specified the short address is to be used per col. 10 lines 40 to 52)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the message sending to utilize shorter address of Fan to the label switching of Benayoun in order to build a system which assigns the label or tag or flow identifier based upon the stability of the network per col. 5 lines 40 to col. 6 line 14 of FAN.

Referring to claim 7, Fan teaches: a network manager (Master CPU per col. 10 lines 41 to 52) An explorer resource configured for detecting network nodes no the network (discovery process for distributing discovery messages for status of modes per col. 2 lines 1 to 24 and col. 10 lines 41 to 52)

And a controller configured for selecting to be used for the switching data packet traversing the network based on a number of the detected network nodes each packet having header with content the controller configuring each network switch of the network to switch each of the data

packets based on a corresponding switching tag (Master CPU or controller sends a status message to the network nodes (12 & 14 per Fig 1) stating the status of the network and inherently synchronizing the size of the field in the header based number of network nodes)

Fan does not expressly call for: adding the switching tag to the start of the corresponding data packet without altering the header.

Benayoun teaches: adding the switching tag to the start of the corresponding data packet without altering the header per Fig 1.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the adding the switching tag to the start of the corresponding data packet without altering the header of Benayoun in place of the modifying the header of Fan because label switching is a faster method of switching packets because the system is not required to look at multiple parameters inside the header in order to switch the packets.

Referring to claim 8, the combination of Benayoun and Fan teaches: the method of claim 7,

Benayoun does not expressly call for: wherein the configuring step includes sending a management datagram to each network switch the management data gram specifying that the switching is to based on the switching tag and the selected size of the switching tag

Fan teaches: wherein the configuring step includes sending a management datagram to each network switch the management data gram specifying that the switching is to based on the switching tag and the selected size of the switching tag (The master CPU in the network relocates short addresses to all nodes (message must be inherently sent to all nodes which the examiner interprets as a datagram which specified the short address is to be used per col. 10 lines 40 to 52)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the message sending to utilize shorter address of Fan to the label switching of Benayoun and Fan in order to build a system which assigns the label or tag or flow identifier based upon the stability of the network per col. 5 lines 40 to col. 6 line 14 of Fan.

Referring to claim 10, Fan teaches: a network within a server system comprising a plurality of nodes (which are switches in a ring per Fig 1)

A network manager configured for detecting network nodes and the network switches, the network manager configured for selecting a size to be used for switching the data packets based on a number of the detected network nodes and the detected network switches each data packet having a header with content (A Master CPU 46 or network manager reallocates shortened addresses to all nodes in the network based upon receiving the message of the changed session number from network nodes which are switches per col. 10 lines 40-52. A node identifies

topology changes and broadcasts a changed to session number to all of the nodes per col. 3 line 6-col. 4 line 7)

The network manager configured for configuring the network switches to switch each of the data packets based on a corresponding switching tag added to a data packet and the switching tag having a selected size each switch received data packet based on the corresponding switching tag (The Master CPU 46 reallocates a shortened address to all nodes which are switches in the network based upon the topology change per col. 10 lines 40-52. Based upon the reallocation of the shorten addresses by the Master CPU 46 the packet processor in each node replaces the long addresses with the shorten addresses per col. 6 line 15-col. 7 line 67. The applicant broadly claims "tag is added to the start of a corresponding data packet". The destination address is added to the header which the examiner interprets as the beginning of the packet and the switching tag is either long address or short address which is specified in the header in the address type field per Figs 2 and 4 or a switching tag having a selected size Fan selecting the size of address field based upon the number of network nodes but teaches shortening the address based upon topology changes per col. 3 line 6-col. 4 line 7.)

Fan does not expressly call for: adding the switching tag to the start of the corresponding data packet without altering the header.

Benayoun teaches: adding the switching tag to the start of the corresponding data packet without altering the header per Fig 1.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the adding the switching tag to the start of the corresponding data packet without alterning the header of Benayoun in place of the modifying the header of Fan because label switching is a faster method of switching packets because the system is not required to look at multiple parameters inside the header in order to switch the packets.

In addition Fan teaches:

Regarding claim 11, wherein the size corresponds to a selected number of bits (A shortened address which corresponds to a selected number of bits per col. 3 line 6 or col. 4 line 7)

Regarding claim 12, wherein each network switch is configured for generating address table entries based on the selected size (look up table per col., 7 line 11-67 or col. 8 line 55-col. 10 line 67)

6.   Claims 3-6, 9, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Benayoun (U.S. Patent No.: 6,499,061) in view of Fan (U.S. Patent No.: 6,643,269) further in

view of Chui (U.S. Patent Pub No.: US2002/0165978)

Referring to claim 3, the combination of Benayoun and Fan teaches: the method of claim 1 and wherein detecting step and configuring step include access the network according to a network protocol (label is added to packet which is based upon a protocol per Fig 1)

Benayoun does not expressly call for: Infiniband network protocol

Chui teaches: Infiniband network protocol (packets per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Infiniband packet (Infiniband Network Protocol) of Chui in place of the packet of the combination of Benayoun and Fan because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address.

In addition Benayoun teaches:

Regarding claim 4, the combination of Fan and Benayoun teaches: the method of claim 3 and Infiniband packet and Benayoun teaches: receiving by a first of the network switches a packet having a destination local identifier specifying a destination node on the network (12 per Fig 1 receives a packet with a destination address for a node which inherently must be on the network per col. 3 lines 6-12)

Adding by the first network switch a new switching tag on the start of the packet having a selected size and specifying the destination node based on the DLID and switching the packet having the new switching tag to a second of the network switches based on the switching tag (12 per Fig 1 adds a label or flow identifier based upon a destination address for a node wherein the label inherently has a selected size in order for the switches to recognize the labels per col. 3 lines 6-12)

Regarding claim 5, the combination of Fan, Benyoun, and Chui teach: the method of claim 4 and Infiniband packet & Benayoun teaches: receiving the packet including the new switching tag by the second network switch and selectively outputting the Infiniband packet following removal of the new switching tag to the destination node based on the destination node being reachable by the second network switch.(14 per Fig 1 (second network switch) receives the packet with the label and removing the new switching tag from the InfiniBand packet based on whether the new switching tag specifies a destination anode is reachable by the corresponding node (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1)

Regarding claim 6, the combination of Benayoun, Fan, and Chui teach: the method of claim 5 and Infiniband packet Benayoun teaches: further comprising selectively outputting by the

second network switch the packet including the new switching tag to a third of the network switches based on a determined unreachability of the destination node by the second network switch (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1)

Referring to claim 9, the combination of Fan and Benayoun teach: the network manager of claim 7 as well as a network packet protocol and Fan teaches wherein the explore resource and congress or for access the network according to a network protocol (col. 10 lines 41 to 52 and col. 2 lines 8 to 24)

The combination of Fan and Benayoun do not expressly call for: Infiniband Network protocol.

Chui teaches: Infiniband Network Protocol (Infiniband packets which utilize Infiniband Network protocol. per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Infiniband packets or protocol of Chui in place of the packet of Fan and Benayoun because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address

Referring to claim 13, the combination of Fan & Benayoun teaches: the method of 11 and wherein detecting step and configuring step include access the network according to a network protocol (label is added to packet which is based upon a protocol per Fig 1)

The combination of Benayoun and Fan do not expressly call for: Infiniband Network Protocol

Chui teaches: Infiniband Network Protocol (Infiniband packets which utilize Infiniband Network protocol. per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the infiniband packet of Chui in place of the packet of the combination of Fan and Benayoun because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address.

Referring to claim 14, the combination of Fan and Benayoun teaches: the method of claim 11 and Infiniband packet in addition Benayoun teaches: receiving by a first of the network switches a packet having a destination local identifier specifying a destination node on the network (12 per Fig 1 receives a packet with a destination address for a node which inherently must be on the network per col. 3 lines 6-12)

Adding by the first network switch a new switching tag on the start of the infiniband packet having a selected size and specifying the destination node based on the DLID and switching the infiniband packet having the new switching tag to a second of the network switches based on the switching tag (12 per Fig 1 adds a label or flow identifier based upon a destination address for a node wherein the label inherently has a selected size in order for the switches to recognize the labels per col. 3 lines 6-12)

The combination of Benayoun and Fan do not expressly call for: Infiniband Network Protocol

Chui teaches: Infiniband Network Protocol (Infiniband packets which utilize Infiniband Network protocol. Per Pg 6 Para [0195])

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Infiniband packet of Chui in place of the packet of the combination of Fan and Benayoun because Infiniband packet is another type of packet in which label switching could be utilized in order to more quickly switch the packets between switches without looking up a destination address.

Referring to claim 15, the combination of Fan, Benyoun, and Chui teach: the method of claim 14 and infiniband packet

The combination of Fan and Chui do not expressly call for: removing the new switching tag from the InfiniBand packet based on whether the new switching tag specifies a destintion anode is reachable by the corresponding node.

Benayoun teaches removing the new switching tag from the InfiniBand packet based on whether the new switching tag specifies a destination anode is reachable by the corresponding node (14 per Fig 1 (second network switch) receives the packet with the label and removes the label or tag and adds another label or tag based upon whether the destination address of the packet is reachable by 12 per Fig 1)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add removing the new switching tag from the InfiniBand packet based on whether the new switching tag specifies a destination anode is reachable by the corresponding node of Benyaoun to the switching of infiniband packets of the combination of Fan Benyound and Chui in order to build a system which utilizes label or tag switching which is faster than routing packets.

Response to Amendment

7.   Applicant's arguments filed 9/7/07 have been fully considered but they are not persuasive.

The examiner respectively disagrees with the applicant argument that amending the independent claims by deleting "of address field" traverses the 112 2nd rejection. It is still unclear whether size refers to size of packet, size of header, or size of tag.

The examiner respectively disagrees with the applicant's argument that the using InfiniBand Network Protocol in the claim allows one of ordinary skill in the art to assess the metes and bound of the claim. The applicant has not provided a copy of the InfiniBand Network Protocol specification which pre-dates the application filing date. The applicant provided a tutorial on the InfiniBand which is not an acceptable substitute for copy of the official copy of InfiniBand Network Protocol Specification. The InfiniBand Network Protocol Specification could be utilized to define the scope of the claims. The capabilities associated with the InfiniBand Network Protocol vary with time and version of the specification. The applicant's claim is not entitled to scope coverage associated with the specification that is a later date that applicant's filing date; consequently, the 112/2nd rejection has not been traversed.

The examiner disagrees with the applicant argument that combination of Benayoun and Fan do not properly reject the "selecting by a network manager a size to be used for switching data packet traversing the network based on a number of the detected network nodes ...without altering the content of the header". It is well known in the art that a tag is a subset of the header. Banayoun teaches adding a label of tag without changing the header or payload. Fan teaches varying the size of an address which is a subset of a header based upon the number of nodes. It would have been obvious to add the varying the size of the subset of the header Fan to the label or tag of Banyoun in order to perform faster switching.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
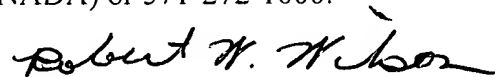
Conclusion

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Robert W. Wilson whose telephone number is 571/272-3075.

The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Edan Orgad can be reached on 571/272-7884. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert W Wilson
Examiner
Art Unit 2619

RWW
11/7/07